

UTKALMANI GOPABANDHU INSTITUTE OF
ENGINEERING, ROURKELA



LESSON PLAN

SESSION: 2022-2023

DEPARTMENT OF ELECTRONICS AND
TELECOMMUNICATION ENGINEERING

SUBJECT CODE: Th.4

**NAME OF THE SUBJECT: ELECTRONICS MEASUREMENT
& INSTRUMENTATION**

BRANCH: ELECTRONICS & TELECOMMUNICATION

SEMESTER: DIPLOMA 3RD SEM

NUMBER OF CLASSES ALLOTTED PER WEEK:

**TOTAL PERIODS ALLOTTED TO THE SUBJECT ACCORDING
TO SCTEV: 60**

NAME OF THE FACULTY: PRIYADARSHINI MISHRA

UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING,ROURKELA



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SUBJECT CODE: Th.4

NAME: ELECTRONICS MEASUREMENT & INSTRUMENTATION

BRANCH: ELECTRONICS & TELECOMMUNICATION

SEMESTER: DIPLOMA -3RD SEM

NO OF CLASSES ALLOTTED PER WEEK: 4(15/09/2022 to 22/12/2022)

NAME OF THE FACULTY: PRIYADARSHINI MISHRA

Week/Date	Lecture	Topic to be covered	Remarks
1 st week 15/09/2022 To 17/09/2022	1 st	CHAPTER-1 Introduction to Static & Dynamic characteristics of Instrument	
2 nd week 19/09/2022 To 24/09/2022	1 st	Accuracy, sensitivity, reproducibility & static error of Instruments	
	2 nd	Dynamic characteristics (Fidelity, range, speed of response)	
	3 rd	Errors of an Instrument, Types of errors	
	4 th	CHAPTER-2 Introduction to indicator & Display devices & its types	
3 rd week 26/09/2022 To 01/10/2022	1 st	Basic principle of meter movement	
	2 nd	Explanation of PMMC & its advantages & disadvantages	

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NAME OF THE FACULTY: PRIYADARSHINI MISHRA

Week/Date	Lecture	Topic to be covered	Remarks
	3 rd	Operation of MI instrument & its advantages & disadvantages	
	4 th	Operation of DC Ammeter & Multi range ammeter	
4 th week 03/10/2022 To 08/10/2022	1 st	Operation of AC Ammeter & Multi range ammeter	03/10/2022 TO 08/10/2022(holiday) Need four extra classes for adjustment
	2 nd	Operation of DC & AC Voltmeter & its application	
	3 rd	Basic principle of Ohm Meter(Series, Shunt)	
	4 th	Basic principle of Analog Multimeters, it's types & applications	

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5 th week 10/10/2022 To 15/10/2022	1 st	Operation of Q Meter & it's essential	
	2 nd	CHAPTER-3 Operation of display of 3 ½, 4 ½ Digital Multimeter & Resolution & Sensitivity	
	3 rd	Operation of Ramp type Digital Voltmeter & applications	
	4 th	Working principle of Digital Multimeters types & application	
6 th week 17/10/2022 To 22/10/2022	1 st	Working principle of Digital frequency meter	
	2 nd	Working of Digital measurement of Time, Measurement of frequency	
	3 rd	Working of Digital Tachometer	

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NO OF CLASSES ALLOTTED PER WEEK: 5(15/09/2022 to 22/12/2022)

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	4 th	Working of Automation in Digital Instruments	
7 th week 24/10/2022 To 29/10/2022	1 st	Block diagram of LCR meters & working	
	2 nd	CHAPTER-4 Basic principle of Oscilloscope & its block diagram	
	3 rd	Block diagram of CRO, Dual trace oscilloscope	
	4 th	CRO Measurements, Lissajous figures	
8 th week 31/10/2022 To 05/11/2022	1 st	Applications of Oscilloscope(Voltage period & frequency measurement)	
	2 nd	Operation of Digital Storage Oscilloscope	

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SEMESTER: DIPLOMA -III

PERIODS PER WEEK: 4

NAME OF THE FACULTY: PRIYADARSHINI MISHRA

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE: 4(15/09/2022 to 22/12/2022)

	3 rd	Operation of High frequency Oscilloscope	
	4 th	CHAPTER-5 Introduction to AC & DC Bridge, Wheatstone's Bridge	
9 th week 07/11/2022 To 12/11/2022	1 st	Maxwell's Bridge & Hay's Bridge for unknown inductance measurement	08/11/2022(holiday) Need one extra class for adjustment
	2 nd	Schering's Bridge & Desauty's Bridge for unknown capacitance measurement	
	3 rd	Working principle of Q meter & measurement of low impedance	
	4 th	LCR meter & it's measurement	
10 th week 14/11/2022 To 19/11/2022	1 st	CHAPTER-6 Introduction to Transducer, method of selecting & advantage of electrical transducer	Internal assessment exam will be started from 14/11/2022 and will be completed on 18/11/2022. 3 extra classes needed for adjustment

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SEMESTER: DIPLOMA -III

PERIODS PER WEEK: 4

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NO OF CLASSES ALLOTTED PER WEEK OFF-LINE: 4(15/09/2022 to 22/12/2022)

Week/Date	Lecture	Topic to be covered	Remarks
	2 nd	Introduction to Transducer, method of selecting mechanical transducer	
	3 rd	Definition & working of Strain Gauge	
	4 th	Working of LVDT	
11 th week 21/11/2022 To 26/11/2022	1 st	Working of Capacitive transducer	
	2 nd	Working of Load Cell	
	3 rd	Working of RTD	
	4 th	Working of Optical pyrometer	
12 th week 28/11/2022 To 03/12//2022	1 st	Working of Thermocouple	
	2 nd	Working o Thermister	
	3 rd	Working Of Current Transducer	
	4 th	Working Of KW Transducer	

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13 th week 05/12/2022 To 10/12/2022	1 st	Working of Proximity & light sensors	
	2 nd	CHAPTER-7 General aspects & classification of signal generators	
	3 rd	Working principle of AF Sine wave generator	
	4 th	Working principle of Square wave generator	
14 th week 12/12/2022 to 17/12/2022	1 st	Working of Function generator	
	2 nd	Function of basic wave analyser	
	3 rd	Working of Spectrum analyser	
	4 th	Basic Concept of DAS	
15 th Week 19/12/2022 to 24/12/2022	1 st	Question practice	
	2 nd	Semester Question discuss	
	3 rd	Revision	